

It is believed a clearer understanding of the present invention will be obtained by first discussing the apparatus of the van der Berg patent, after which the present invention will be discussed, along with the newly submitted claims.

The apparatus shown in Figs. 1 and 2 of the van der Berg patent is an automated multi-function apparatus that is positioned in a particular stall. Thus, if these are located in a milking parlor where there a plurality of such stalls, each stall would be equipped with the apparatus, such as shown in Figs. 1 and 2, and would travel with that stall through the milking cycle.

As shown in Fig. 1 of the van der Berg patent, the apparatus is arranged to move along a rail 4 by means of rollers 16, with the apparatus being suspended from these rollers 16. With reference to Fig. 2, it can be seen that there is a robotic arm 31 through which the major functions of this apparatus are performed. First, a milking operation is performed and it can be seen in Fig. 2 that there are teat cups 53 and 54 which engage to the teats of the cow and are positioned at the end of the arm 46 that is in turn connected to the arms 45 and 44 of the robot arm.

Then there is a teat cup cleaning operation, and there is a teat cup cleaning device 57 for the teat cups 53 and 54. This cleaning device 57 comprises a plurality of spray nozzles which perform a cleaning (disinfecting) and rinsing operation. It can be seen from observing in Fig. 2 that these spray nozzles 58 spray downwardly onto the teat cups 53.

Then in a further embodiment, as shown in Fig. 10, there is also a cleaning member 84 for cleaning the teats of the cow, and this comprises two adjacent cleaning elements in the form of profiled rollers 85. These are moved into engagement with the udder of the cow to perform their cleaning action.

Finally, in a further embodiment, the robot arm 46 includes an after treatment device 105 (as shown in Fig. 16) for disinfecting the udder and/or teats after the animal has been milked. (See Col. 12, beginning at line 38.) As disclosed in Col. 13, beginning at line 12, after the milking procedure has been terminated the teat cups 53 and 54 are removed from the teats of the animal. At the termination of the other operations described above, the robot arm 31 is

positioned so that the spray from the spray nozzle 105 is received precisely at the rear side of the udder of the milked animal. Then the valve is opened and the cleaning liquid is sprayed under the cow's udder as the robot arm moves the spray nozzle.

Let us review this operation in the van der Berg patent in a typical rotating milk parlor. As indicated above, for these operations to take place for each of the stalls, the apparatus of Figs. 1 and 2 has to be in place at each stall. During the milking cycle, the robot arm would be positioned so that the teat cups can be raised to come into engagement with the teats of the cow's udder and the milking operation takes place. Subsequent to the milking operation when the cups 54 are moved away from the cow's udder, the cleaning operation of the teat cups 54 would take place by the cleaning fluid being discharged from the nozzles 58 onto the teat cups. Then the rollers 85 come into engagement with the teats to perform a cleaning operation. Finally, the spray nozzles 105 are opened to do the final cleaning of the cow's udder and the teats.

Let us now review the main components of the present invention as recited in claim 20. It can be seen in the preamble of claim 20 that this is a system adapted for cleaning the udders of cows in a milking parlor where there is a plurality of milking stalls which move through a milking cycle.

Then as recited in paragraph "a" of claim 20, the system comprises an udder cleaning apparatus positioned at a cleaning location which is intermediate at the milk extracting region and the exit location of the parlor. This cleaning apparatus comprises a cleaning section which is movable from a retracted position which is out of the path of travel of the stalls to a cleaning position where the cleaning fluid is directed against the udder of the cow.

Then in paragraph "b" of claim 1, there is recited the control section which has a location sensor which is responsive to the location of the stalls. This sensor provides signals identifying arrival times at which stalls arrive at the cleaning location. Then the control section is arranged to activate the actuating mechanism of the cleaning apparatus to cause the cleaning section to move from

the retracted position to the cleaning position to discharge the cleaning fluid, and also to retract the cleaning section from the cleaning position.

It is important to note that the cleaning apparatus is positioned at the cleaning location with the stalls passing by the cleaning location, and not on the moving platform.

Also, as recited in claim 20, subsequent to the cleaning cycle being completed, the control section initiates a second cleaning cycle in response to the presence sensor sending a signal that a subsequent stall is arriving at the cleaning location, so that the same cycle is repeated.

It is apparent that this combination is not taught from the van der Berg patent. In the claim 20 it is indicated that the udder cleaning apparatus is positioned at a cleaning location which is intermediate to the milk extracting location and the exit location, so that the stalls passing by said cleaning location. This is not true of the van der Berg patent since the mounting structure 46 and the cleaning sections 68 and 84 are each stationed on the platform and simply move with a single stall.

In making the rejection in the last Office Action, it is stated that the sensor system 22 of van der Berg is adapted to detect if a cow is in the cleaning section. This is inaccurate. There is a sensor section 22 in van der Berg, but it is present in the van der Berg patent for a rather different purpose. The description of sensor 22 begins in Col. 6, line 43 and continues onto Col. 7 on down to line 26. A careful reading of this section indicates that there is a plate 26 which reflects the output from the sensor 22. This text describes that there is a member in contact with the cow, and as the cows move forwardly or rearwardly, the supporting elements 23 continue to be urged against the rear side of the cow by the pressure inserted by the compression spring 28. The position of the plate 26 corresponds to the position of the animal in the milking parlor. The sensor 22 moves in a manner to keep a constant position from the plate 22 and thus causes the arm 46 of the milking robot to move to conform to the cow's movements in the longitudinal direction within the stall of the moving milking parlor. (See particularly lines 22 through 27, of Col. 7).

In contrast to this, in claim 20 there is recited the positioning sensor which senses when a particular stall is at the cleaning location, and then the position sensor sends the a signal to activate the actuating mechanism to move the cleaning section into its cleaning position. This is not present in van der Berg.

In a depending claim 21, there is a recited a presence sensor which responds to the presence or absence of a cow in the stall which is at the cleaning location. This also is clearly absent in the van der Berg patent.

Also, while the van der Berg patent does have its section 68 and 84 movable from the cleaning position to a retracted position, that does not meet the limitation of claim 20 that the cleaning fluid dispensing portion is movable between a retracted position which is out of the path of travel of the stalls. Obviously, the cleaning apparatus of the van der Berg patent cannot be out of the path of travel of the stalls since it is actually mounted in the stalls and thus movable therewith.

Again, at the risk of being repetitious, the entire cleaning apparatus of the present invention does not rotate with stalls. Rather, it is at a cleaning location, with the stall passing by.

As the Examiner is well aware, in order for a single reference to render the claimed invention unpatentable, there must be some suggestion or teaching in the van der Berg patent to lead one toward the apparatus of the claimed invention. Also, (and as the Examiner well knows), the teachings of the present invention cannot be used as road map to throw up the suggestions as to how to modify the reference which is deemed to make the claimed unobvious.

So let us know put ourselves in the situation where someone of ordinary skill in this art is given the van der Berg patent without any suggestion of the present invention, and we ask that person what suggestions or modifications or improvements could be made to the van der Berg apparatus by examining the text and drawings of this patent. First, the van der Berg patent shows for each stall a single robotic system with a robotic arm which moves the milking apparatus into engagement with the cow's teats and removes it therefrom. It then sprays the milk cups of the milking apparatus to cleanse these. Then it has

a roller mechanism to clean the udder and teats of the cow. Finally, it sprays the cow's udder, along with the teats.

If the van der Berg apparatus is to be used in a typical milking operation, the milking apparatus must stay with the cow for a fairly extended part of its path of travel in the milking parlor. Therefore, the milking apparatus is dictated to be adjacent to that particular stall and to that particular cow for a fair amount of the total milking cycle. Beyond that, the van der Berg patent shows a multi-functional automated system. There's no suggestion at all to dismantle this system, move part of these to another location that is not on the rotating platform, and add a positioning sensor and a control section external to the milking parlor in an effort to reconstruct the present invention.

When we look at the benefits of the present invention, where the disinfecting operation can be performed simply and easily by one mechanism serving a plurality of stalls, we can see there are clearly not suggested in van der Berg. Further, this is done with a control section which also is clearly not suggested in any way by van der Berg.

These remarks are not followed by a marked-up version of the changes made to the specification and claims by the current amendment, since the claims originally submitted have been cancelled.

It is respectfully submitted that the claims in the present application should be found allowable. If there is any matter which could be expedited by consultation of the Applicant's attorney, such consultation would be welcome. The Applicant's undersigned attorney can normally be reached at the telephone number noted below.

Signed at Bellingham, County of Whatcom, State of Washington this
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Respectfully submitted,

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